

Spinal cord - reflex centre.

- carries sensations to & from brain.
- nourishes nervous system.
- protected by bony framework.
- co-ordinates fibres which make up the nervous system.

12 cranial nerves - 4 nerves to eye.

innervation - nerves of (tongue).

myelin - sheath covering white nerve fibres.

reciprocal innervation - flexors + extensors work together - one contracts, one relaxes.

cramps - flexors + extensors contract together.

cranial - sense nerve.

spinal - pain & pressure nerves.

pain, pressure, heat, cold sense organs.

optic chiasma - crossing of optic nerve.

receptors - on skin

motor centre - in brain

(archicerebrum - lives in air, dust, stables.

tetanus)

Cerebrum -

reflex centre

muscular control

seat of intelligence.



## ● Chapter 10.      Nervous System.

### Spinal cord -

- carries sensations to & from brain.
- nourishes nervous system.
- protected by bony framework.
- co-ordinates fibres which make up nervous system.
- acts as reflex centre.

### Cerebrum -

- muscular control.
- acts as reflex centre.
- seat of intelligence.

### ● Cerebellum -

- balance - muscular control.
- makes activity go smoothly.
- helps cerebrum to act.
- stops movements when they need stopping.
- rhythmic repetition.
- controls muscles in normal state of tension.
- re-enforces cerebral cortex.

### Care of nervous system.

- Nutrition - correct amount & kind of food.
- digestion.
  - distribution of nutrients through all the cells.



Fatigue - causes nervous system.  
- nerve tissues become fatigued.  
- retain toxic substances.  
Infection - poisoning of nerve centres.

Drugs - stimulants & narcotics  
- alcohol a depressant.

Habits - hygienic & mental habits.

### Abnormal Devices.

- inferiority
- persecution
- rationalization - defence
- fantasy - day-dreaming.
- ~~making~~ excuses.
- neurotic ill
- worry.

### Suggestions.

- cautious
  - sufficient unto the day.
  - confident
  - self-control
  - don't run from emotions & real life
  - be efficient.
  - do one thing at a time.
  - make practical decisions.
  - do not hurry & worry.
  - work, play, rest, exercise in proper proportions.
  - carry out decisions quickly.
  - don't criticise your part in play.
- 322 - be broad-minded



● Thyroid - 2 - trachea - iodine thyronin

- 1) paste-maker of body  
slow - low metabolism  
fast - high "
- 2) regulates metabolism + stamina.  
cretinism, goitre, myxedema.

Parathyroid behind thyroid.

- 1) sugar + calcium metabolism.  
mouth problem

Pituitary ant. + post. pituitrin

- 1) contraction of smooth muscles.
- 2) ant. - growth

● acromegaly, hypopituitarism.  
(retarded growth)

Pancreas - insulin

- 1) uses up glucose.  
diabetes.

Adrenals - upper kidneys adrenalin

- 1) acts S.N.S. - extra energy.
- 2) neutralizes fatigue products
- 3) liberates sugar from liver to muscles
- 4) releases ferments from liver  
to clot blood.
- 5) dilates pupils of eyes.

Addison's disease.

● Cortin cortin.

- 1) enables body to mobilize enzymes  
of digestion.
- 2) sexual activity.



Pituitary - midbrain - sex hormone  
- duct of Sylvius

- stops at puberty.

1) inhibits sex development.

Thyroxine - below thyroid.

1) retards sex development.

- prevents mental + emotional maturity

2) growth.

Gonadotropin - both sex cells.

Corpus luteum ovary

1) controls menstrual cycle.

Secretin - small intestine

1) goes to pancreas on food consumption

Follicular hormone.

1) controls menstrual cycle.

2) nervous strain.

- upsets calcium balance.



## Endocrinology

- blends - secrete hormone.  
of  
internal - typical to that gland.  
secretion - ductless gland.  
- countless small cells.  
- each manufactures hormone.  
- form a network of blood vessels.  
- secrete hormone directly into blood.

Thyroid - in front of trachea - beside.  
- thyroxine.

Adrenal - top of the kidneys.  
adrenalin.

Pituitary - mid-brain.  
pituitatin.

Pancreas - insulin.

Reproductive organs - endocrine actions.

Pineal - brain. chilled

Thymus - throat - lower than thyroid.

Para-thyroids - behind thyroid.

May have endocrine action  
tonsils

spleen - stress r. h. c.

Slend - hypo - gland not working enough.  
hyper - " works over time.

Thyroid - paste - maker for body.

- Thyroxine - handles functions of body.
- slow - low metabolism
- fast - high metabolism



② - change from child to adult

Thyroid - affects mentality. (metamorphosis)

- enlarged - goitre.

- cells manufacture fluid instead of thyroxine & so enlarge.

- fluid collects in one central cell.

non - developed in childhood. - cretins.

- mentally + physically.

- lack of iodine. (thyroxine injections)

① - regulates metabolism & stamina.

- glands control nervous system.

- endocrine balance.

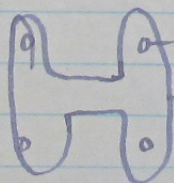
Pituitary - ant. + post. lobes.

- acromegaly - disease of extremities.

- caused by ant. lobe too active.

- gigantism - if active all during youth.

Dwarf - recessive - gene for death.



PARATHYROID - CALCIUM/UTILIZED.

THYROID

Para-thyroid - utilizes calcium.

- calcium - lack of it - cramps.

- cramps of stomach

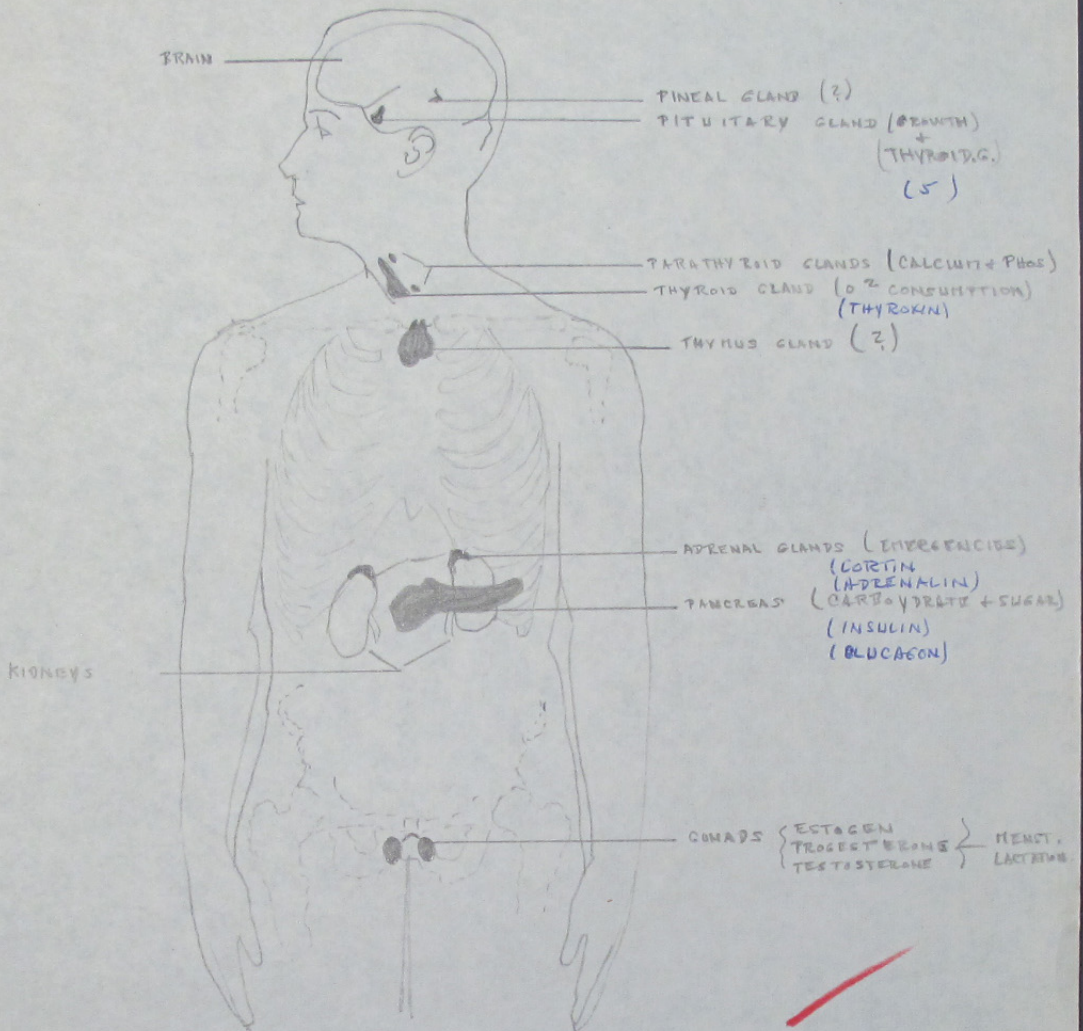
" " larynx.

- parathormone.

- bones, skin, hair.



DISTRIBUTION OF ENDOCRINE GLANDS.





Thymus - childhood.

- function longer.

Thymic atrophy - beautiful + charming

- function retards sexual development

- prevents mental + emotional maturity.

- heart + blood-vessels don't develop.

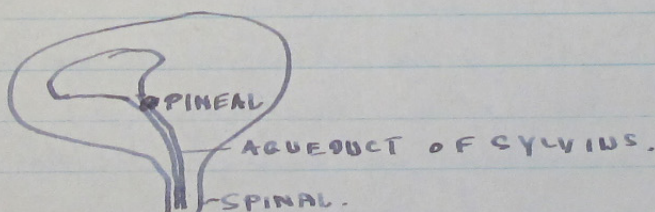
- cerebral haemorrhage, fright, strangulation, homosexuals.

- feel insecure, drug + drink addicts

Pineal - middle of brain

deep - between 2 hemispheres.

- behind duct of Sylvius.



- injury - headaches, vision disturbed, hallucinations, speech

- inhibits sexual development.

- repression at puberty.  
(puberty, prepub.)

Pituitary - <sup>1)</sup> pituitary - growth element.

- over-activity - gigantism

(before puberty)

- hypopituitarism  
(adult.)



under-active - fat people.  
- reproduction - rabbit injected with urine  
- false pregnancy.

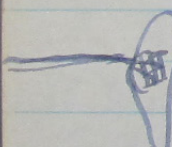
2) smooth muscles - caused contraction.  
obstetrical situation - smooth muscle of uterus.

Adrenal - above kidneys  
parts - medulla - inside  
cortex - outside.  
cortex secretes cortisol

- essential to life.  
cortisol - 1) enables body to mobilize enzymes  
of digestion.  
2) neural activity - ~~neural~~  
secondary development.

medulla - secretes adrenaline.

1) acts sympathetic nervous system  
no extra energy.  
2) neutralizes fatigue products.

 neph - neural junction  
3) liberates sugar from liver to muscles  
4) releases fragments from liver  
to clot blood.  
5) dilates pupils of eye  
- bronchial tubes.

Addison's disease of adrenal glands.  
Tan Motes.

Follicular hormone - 1) controls menstrual cycle.

Thyroid follicle

2) nervous strain.  
upsets calcium balance.

Cyprian butters





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